

THE TREATMENT OF THE BACKWARD CHILD

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'HIAWATHA'

THE TREATMENT OF THE BACKWARD CHILD

by

R. K. ROBERTSON, B.Sc., B.Ed.

SOMETIME EDUCATIONAL PSYCHOLOGIST TO THE
BARNESLEY EDUCATION COMMITTEE

with a foreword by

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FOREWORD

R. K. Robertson came to Barnsley as the first full-time Educational Psychologist in October 1940. His interest in children was that of a father, and he showed all the qualities of patience and understanding of children which are looked for in a good parent. He had this sympathy particularly for boys and girls who were unable, for a variety of reasons, to keep pace at school with their more able fellows. He was, himself, a man of high intellectual capacity, and in his quiet and modest way he communicated to a number of head and assistant teachers in Barnsley an understanding of the problem of backwardness in children and a conviction that his suggestions for dealing with that problem were the right ones.

It was a great misfortune that his health failed and after an illness of several months he had to give up his work in Barnsley in December 1941 to live in the south of England. The classes which were started during his period in Barnsley are still running; others have been added to them; a few have gone out of existence, but only because of a shortage of teachers willing to undertake the work.

I commend this booklet as offering a contribution towards the solution of a problem which is present in every Primary and Secondary Modern School. It cannot offer a complete and final solution, but where good and sympathetic teachers have been available for the work the benefits to the children concerned have been immense.

H. V. LIGHTFOOT

PREFACE

This book has been based on material abstracted from the papers of R. K. Robertson after his death. The chief sources were two: duplicated notes on 'The Conduct of Special Classes in the Elementary Schools', prepared for a lecture course held in Barnsley in September 1941, and a report to the Barnsley Education Committee on 'The Work of the Special Classes for Backward and Difficult Children, from 1st October 1940 to 31st December 1941'. We are grateful to Mr. H. V. Lightfoot, the Director of Education for Barnsley, for permission to use this report.

We are conscious that in many places in this book there may be phrases and constructions which R. K. Robertson himself would not have used. But throughout these pages we have endeavoured to present the ideas and ideals which we know, through many years of friendship and discussion, were his: and we hope that despite the imperfections of our editing we have succeeded in passing on to the reader some of the beliefs and enthusiasms of an outstandingly successful educator and psychologist.

The photographs are selected from a series provided through the courtesy of Mr. Lightfoot. They were not taken during Robertson's time at Barnsley and cannot therefore be claimed as direct products of the work he inspired. They do, however, show some aspects of the kind of activity he tried to promote.

• STEPHEN WISEMAN
A. J. JENKINSON

ILLUSTRATIONS

'HIAWATHA'	<i>Frontispiece</i>
PREPARING FOR A PUPPET SHOW	<i>page</i> 11
A PUPPET SHOW IN PROGRESS	19
A NATIVE KRAAL MADE FROM MODELLING CLAY AND MILK-STRAWS	25

THE TREATMENT OF THE BACKWARD CHILD

There have always been children in the elementary schools who were unable to profit by the education provided there. The extreme cases have always been excluded from school, and kept either at home or in an institution. The next grade have usually been collected into special schools. The next again were those who were 'just a little behind the others' in the infant class, but were given their chance. Some took this chance, others could not, and got farther behind. Soon they were kept down to do the same work for a second year. Sometimes this was repeated. The principle of promotion was to move upwards those who had mastered the work of the year, and to keep back those who had not. Thus the backward child was usually in a class with much younger children, still failing to make proper progress, but still attempting to work with cleverer children.

About 1925, it was clearly recognized that this was very bad both for the older and the younger children. The older ones were constantly discouraged, and tended to find little satisfaction in school work. They became difficult, even delinquent; they led astray the younger, cleverer children they were classed with. The Hadow reorganization with its transfer to senior schools at eleven years of age finally put an end to this system of dealing with backward boys and girls, and from 1926 onward it became common to promote entirely by age, till now it is almost universal.

In many ways this is to the advantage of backward children, as they are kept along with their companions of the same age. There is no doubt, however, that it accentuates backwardness, particularly in schools which are not big enough to allow each age-group to be organized in three or more 'streams'. The child is failing each year to 'make the grade'; each year he is started on more advanced work; each year he feels that his task is more hopeless than ever. Such intensive work as a

teacher of forty or fifty children can do has no effect on the backward child except to depress and bewilder him still more. He begins to feel that he is good for nothing, and exasperated teachers do not always refrain from supporting his fears. He becomes difficult, often because this is the only way he can distinguish himself and gain the approbation of his fellows; or he becomes apathetic, dour, and completely unresponsive and shut up in himself. So the backward pupil is partly born, partly made by the conditions under which he is taught.

Of late years, the problem has become even more intensified as a result of the disorganization due to the war. The ill effects of evacuation, half-time schooling, the emergency grouping of classes, and the host of other interferences which, in spite of the efforts of a depleted teaching staff, seriously reduced the effectiveness of the schools, inevitably affected the dull child more than his brighter brother. The effects of this are sure to be felt for some years to come.

CLASSIFICATION OF BACKWARD CHILDREN

A common, and useful, method of classification is by *Intelligence Quotients*, or I.Q.s. Before the 1944 Education Act, the usual categories adopted were:

I.Q.s 85 to 70. *Dull* (about 15% of the school population).

I.Q.s 70 to 50. *Feeble-minded or mentally defective*, educable in special schools. (About 1.5% of the school population in urban areas. The figure may be higher in rural areas.)

I.Q.s below 50. *Ineducable* in ordinary or in special schools. (About 0.4%).

Classification by I.Q. is, however, not particularly satisfactory if we want to get a picture of the total problem, since many backward children are not *dull*, but *retarded*; i.e. they show obvious (and sometimes severe) backwardness in school, but have I.Q.s over 85. The 1944 Act now groups all classes of backward children under the single heading of *educationally subnormal*, and the Ministry suggests as a criterion 'a standard of work below that achieved by average children 20% younger'.

The proportion of children who are educationally subnormal may vary widely from one area to another. The Ministry's pamphlet quoted above estimates 10%, but if we adopt the criterion they suggest it may well be 15% or more for the country as a whole. In rural districts the proportion is possibly 20%. In certain districts in a town it may rise to 20% or fall to 1½%. In individual schools it may be 30% or 0%.

THE CAUSES OF BACKWARDNESS

About 50–70% of the backward group may be regarded as backward through low intelligence—i.e. the *Dull and Backward* (I.Q.s 85 to 70) and the *Mentally Defective* or *Feeble-minded* (I.Q.s 70 to 50). The difference between these groups is merely one of degree of intelligence; the Mentally Defective do not form a separate group of different children—they are merely the lowest grade of intelligence which we can educate in the schools.

The remainder of the backward group, i.e. 30–50%, will here be termed *Retarded*. These are the children whose failure in school work is not due primarily to low intelligence, and whose I.Q.s are above 85; i.e. they are of average or maybe above average intelligence. The main causes of retardation are:

- (i) Specific disabilities, mental and physical (e.g. bad sight, bad hearing, high-note deafness, poor form perception, etc.).
- (ii) Irregular attendance, frequent change of school, etc.
- (iii) Emotional difficulties (e.g. neurotic and psychotic traits, stepmother difficulties, phobias, etc.).

THE ATTITUDE OF THE BACKWARD PUPIL

Before deciding what organization is required to provide for the backward child, we must investigate another aspect of the problem. The backward pupil differs from the bright and normal pupil not only in his performance, but in *his attitude to school work*. He can often be picked out by his looks—he is sullen and apathetic, or inattentive, or assertive and ‘tough’.

He has been 'kicked around' for so long that he is persuaded that he will never be able to do anything properly. Everything he does is a failure. He no sooner begins to get a glimmering of how to do a sum than he is hurried on to try some other kind. He never masters one step before he is asked to attempt the next. At the end of three or four years of this he approaches a new problem in such a dazed and stupid condition that the best teaching in the world is wasted on him. *What he needs is not more instruction.* He has had extra instruction for years. What he needs first is to regain the conviction that there is something he can do in the world, that he need not always be a failure, that he can learn, and that he is not a useless dunce. *He needs to have self-respect and self-confidence restored.* He needs expert instruction too, going back to the roots of his learning, finding what errors he makes, why he makes them, and giving him the necessary help in overcoming them. But this instruction will not succeed unless his attitude is changed.

LEARNING TO THINK FOR ONESELF

In the larger junior schools the problem of the backward child was often met by having a backward class, and giving the class (comprising forty or fifty children) to the most aggressive and stirring teacher. He drilled it into them; he frequently 'knocked it into them'. At the end of his treatment these children could do what they had been coerced or frightened into doing, but they were as unhappy and difficult as they were before, and they were in no position to face life after school. What they had been taught was in the form of tricks, just like performing animals. Left to themselves, they had not the understanding to put these tricks into use.

John Dewey has said: 'All that the school can or need do for the child is to develop his ability to think.' All that he learns, the information he gains, the skill he acquires, is of no value to the ordinary man unless he can think and reason with it. It is particularly easy to train backward and defective children to a degree of skill greater than they can use. Is skill in mechanical arithmetic of any use to a backward child? In real life we meet only problems. He *may* become a book-

keeper or tally man, but the chances are a thousand to one against it. It is unlikely that he will have to make any computation which does not begin as a problem.

'Thinking originates in a forked path situation';¹ in a situation where the appropriate action is not clear, which proposes alternatives. Thinking begins when we perceive problems for ourselves. The problem may be met in an entirely stupid way—e.g. by kicking the wireless that won't go; or it may be met by the systematic collection of information towards a solution, and the final testing of this solution by trial. To teach children to think for themselves is to give them opportunities to master the latter method, as far as their ability allows. Even the lowest intelligence can solve simple problems (chimpanzees can—mental age 1½ years), so even the lowest defective can solve problems, can think up to a certain level.

If we wish to train children to think, we must set difficulties in their way. Problems that are too difficult merely discourage the children, who fall back on chance and magic and other emotional methods of meeting the situation. So the difficulties the child finds for himself are often the best, and the teacher's greatest skill is shown in choosing how much help the child shall be given.

The essentials are . . . that the pupil have . . . a continuous activity in which he is interested for its own sake; secondly, that a genuine problem develop within this situation as a stimulus to thought; third, that he possess the information and make the observations needed to deal with it; fourth, that suggested solutions occur to him, which he shall be responsible for developing in an orderly way; fifth, that he have opportunity and occasion to test his ideas by application, to make their meaning clear, and to discover for himself their validity.'¹

EMOTIONAL DEVELOPMENT

The child develops character and social adjustment through his emotional attachments to other individuals. His first attachment is to his mother; then to mother, father, servants, and family friends; then to brothers, sisters, and companions

¹ John Dewey.

of his own age; then to teachers and grown-ups; and lastly to the persons of the opposite sex with whom he falls in love.

(The depth, number, and variety of his earliest attachments are of the very greatest importance, and so is the satisfaction they give or the frustrations they produce, because later attachments are, to some extent, new expressions of the old relationships, with new persons substituted for the old. Growing up emotionally means reducing the pervasiveness of the old attachments, so that one reacts to people as they really are, not as our earlier 'loves' were, nor as we imagine people to be. Children are often 'fixated' at early stages—they cannot grow out of the infantile dependence on the mother, for example. Then the teacher is to them a new mother, and they 'project' the qualities of the mother on to the teacher, inventing suitable fantasy incidents to account for this attitude—think, for example, of the stories children tell of having been spanked, etc., when no such incident has taken place. It is clear that the teacher can help the child's emotional development only if she becomes emotionally important to the child. Compare the phenomenon of 'transference' in psycho-analysis and child guidance. This requires a relationship more intimate than many teachers allow; also a good deal of time doing things for individual children.

Growing up is growing out of fantasy and magic towards a realistic way of looking at the world. Hence from the beginning every contact with truth helps emotional development. This cannot be attained, however, by forcing truth on the child. His fantasies must be respected. If he can be persuaded to use the materials provided to express his day-dreams, then his contact with reality can be increased. The sympathetic acceptance by the father of his queer stories, pictures, moods, the teacher's approval of his curious acts will help him greatly to an attitude of accepting the world as it is, and not as he would like it to be; and this is one of the most important elements in sanity and the placid mind.

TWO WAYS OF LEARNING

Sea-lions can be taught to play 'God Save the King' on a

trumpet. Seals can be taught to balance balls on their noses. Horses can be taught to multiply three by two—or to indicate the correct answer. These acquisitions are entirely specific responses to signals; the animals cannot think with them. To the animal left to himself they are of no value. On the other hand, a chimpanzee can think out how to use a stick to get fruit: left to himself he will often be able to make use of this method if it is appropriate.

There is a stupid way and an intelligent way to train a child to do almost anything. If one has to teach a child of low mental age there is a constant temptation to adopt the stupid method. It makes a show. The child can do what he is asked to do. The disadvantage is that if he is not given the learned signal he can make *no use whatever* of his new acquirement; indeed, knowing a new fact, having a new skill, may make him more stupid than ever, because he thinks he knows what to do and does it blindly and mechanically, being blinded from looking at the problem by the thought that he has a solution. Think of the Epaminondas story.

There is a constant tendency to adopt stupid methods with dull and backward children, instead of waiting until they can understand. That time may be years later than the normal. It may never come—but then one may say with confidence that it is no loss to the child that we have not tried to teach him. Remember the many children who reach fourteen or fifteen unable to read with profit, or to reckon their purchases, though they can make the right noises and do long division with only a few mistakes. Something that years of practice does not teach may be learned in a day if we wait until the pupil needs it, knows he wants it, and is mentally old enough to *understand* it.

Learning with understanding, learning with insight, should be the aim of all work with backward children. Nothing else is of permanent value to the dull, or indeed to any grade of intelligence. The bright child can, however, sometimes convert his mechanical acquisitions into living knowledge: the dull child can never do this. Many things for which, if started at the mental age of six, one would have to use 'stupid' learning methods, will be learned intelligently and with ease if we wait

until the child is, mentally, eight. The golden rule for intelligent learning is to *wait*: not to allow the expectations of another school, or the parents or inspectors to force the pace. 'Have patience; let it come.'

METHODS AND ORGANIZATION

What organization is required to provide for the backward child? What methods can we adopt to alleviate the condition of the backward children we have at present? Can we deal with the different kinds of backward children in the same class? What can we do to prevent backwardness?

The answer proposed to the first two of these questions is to have in every school where there are sufficient backward children a Special Class. This is a very different institution from the type of backward class previously described on page 4. *It must be small*, with not more than about twenty children, so that each child can be studied individually. *It must be in the hands of a specially gifted teacher*, because it is work requiring great insight and much patience. *It must be run on free activity lines*, since a change in the child's attitude cannot be obtained by drilling, and the aim is to change the conscious failure, who fails even to meet one's eye, into a person confident that he can use what ability he has and that he is not useless after all. It needs special apparatus and supplies, and special accommodation.

A pertinent question at this point is: 'Is it fair to the others?' Is it fair to take the best teachers, give them extra supplies, and put the poorest scholars in classes of twenty? Is it the best use of our teaching force? It can be justified from a number of considerations:

- (i) We, by the arrangements we have made for his schooling, are partly responsible for the backward boy. We owe him something, some effort to mend his conditions, even at extra expense.
- (ii) If we can make him a potentially contented and happy citizen, we have a good investment: *for four out of five delinquents and criminals come from the ranks of the dull and backward.*

- (iii) The normal and bright children have a much better chance of striking out for themselves. They can use what they have learned. The dull child needs more help.
- (iv) In many cases, three to six months in a class like this makes such an improvement that the child can go back with his ordinary classmates and keep up.

THE FREE ACTIVITY METHOD

So much misunderstanding has arisen over this term that some attempt must be made to explain it. It is a principle of education, rediscovered from century to century, that a child will learn a great deal for himself if he is given suitable material and conditions, and suitable encouragement. An infant learns to talk. He needs grown-ups and children round him talking—if he has not, then he does not learn. He needs grown-up praise and expectation and help at times, so that he often attains *the feeling of success after effort*, one of the most satisfying emotions a young child can have.

Many attempts have been made to combine freedom of development for the individual pupil with efficient instruction in the essential skills of civilized living. The most recent of these has developed in the infants' schools in this country from the nineteen-thirties onwards. Its impetus was derived very largely from the Malting House School in Cambridge, carried on from 1926 to 1928 by Dr. Susan Isaacs, and described by her in her two books, *Intellectual Growth in Young Children* and *The Social Development of Young Children*. Her aim was to provide an ideal environment for children to grow in, so that their full powers would be developed. She was guided by the educational doctrines of John Dewey (from whose writings many quotations have already been taken in this pamphlet), and by the Freudian psychology applied to the play of children, and developed by herself and many others in child guidance work. Freud insisted that the play of children expressed their unconscious wishes, and that it must have a value to the child no matter how silly and useless it appeared to the grown-up. There is, consequently, no need to try to make all play didactic,

to seize every opportunity to teach something, to use the play interest as an excuse for instruction. The other guiding line in fashioning the school was Dewey's psychology of thinking. No one thinks in the course of ordinary routine activity. Only when we are stopped by a difficulty or a dilemma do we stop to think. Only by solving these problems by ourselves do we begin to think. Thus a child must be brought up against problems of suitable difficulty if we wish him to develop his powers of thinking to the level which his intelligence makes possible.

If a group of children are left free in an environment provided with stimulating materials and tools to pursue their own purposes, they will (i) find and solve problems in the course of their activities; (ii) develop a technique of thinking; (iii) play out their fantasies in the presence of an approving adult, and work off in this way bad temper and sullen moods; (iv) find in the course of their activities the need to count, to read and to write, so that they will be ready and anxious to learn; (v) pick up much general knowledge, which they will organize in the form best suited to their own use. Good infant schools now arrange such an environment, and the joy and pleasure the children take in such achievements is only matched by the efficiency with which they learn through their own efforts. In addition, this voluntary learning and the activities they choose have a great influence in ensuring sound character formation which will be a lifelong satisfaction both to the individual and to society.

THE TECHNIQUE OF THE FREE ACTIVITY METHOD

No one can give in a paragraph anything but a bald sketch of the method, and everyone interested is advised to read the following books:

Play in the Infant School. E. R. Boyce. Methuen, 1938.

Infant School Activities. E. R. Boyce. Nisbet, 1939.

Intellectual Growth in Young Children. S. Isaacs. Kegan Paul, 1930.

The Social Development of Young Children. S. Isaacs. Kegan Paul, 1933.



PREPARING FOR A PUPPET SHOW

The Children's Play Centre. D. E. M. Gardner. Methuen, 1937.

Testing Results in the Infant School. D. E. M. Gardner. Methuen, 1942.

Experiments with a Backward Class. E. Taylor. Methuen, 1947.

The technique is to provide children with an environment which offers them a variety of material and tools, and to encourage them to use these singly or in co-operation. In the course of these activities—running shops, making houses, boats, motor-cars, running a post office, a travel agency, producing plays, and so on—the need to read and to write and to count is constantly cropping up. They must measure. They must reckon and plan. Otherwise their schemes fail. The activities are at once a motive and an opportunity for learning. When a boy needs help he comes for it. He wants to be taught. What a revolution this is in the attitude of a backward boy! He is ready to use his own skill: consequently he works as he never worked under compulsion. It is, in fact, a constant source of astonishment to see what concentrated work a backward child will put into his self-chosen activity. I know schools of this kind where the children cannot be kept out of school after the first teacher arrives at 8.15 a.m., and can hardly be got out of school at 5 p.m., when the last teacher leaves.

The list of materials and tools for Free Activity Periods (pages 31 ff.) gives some idea of the scope of these self-chosen activities. When one enters an infant school using this method, one finds the corridors, the cloak-rooms, the corners of the hall, and the playground and waste space outside full of active children, bustling around, painting trucks, fixing wheels on ambulances, preparing a hospital for air-raid casualties,¹ making cars, railway engines, and, of course, aeroplanes, costumes for North-west Mounted Police, huts for their gang, chairs for their huts, biscuits and cakes to eat at birthday parties, or to sell in one of the many shops going; some doing jig-saws, some reading, some with peg-boards or number apparatus, some painting or modelling or simply making

¹ No doubt some of these will by now be converted to road casualties!

messes with sand and water. They are mostly happy and absorbed. There may be a few mooning around aimlessly, but they are not interfered with. They may finish with their day-dream and turn to in a few minutes, or they may spend a week like this, adjusting themselves, maybe, to the arrival of a baby brother, or to their mother going away for a time.

The signal to clear up will be given ten minutes before the time for stopping. Then milk-time, play-time, assembly conducted by one of the children with others telling their news, followed by reading, writing, counting; stories and plays; music, rhythm, and physical training; visits and nature walks.

The school is a community of children investigating the world into which they are growing up, developing the spirit of inquiry, the scientific and the aesthetic attitudes, gaining as they need them the tools they require for further inquiries. The history, the geography, the economics of this world will come into their inquiries just so far as they are sufficiently understood to be factors in the problems which become their concern. The stories and myths of our culture make the framework of their make-believe and drama; their own lives provide the more realistic drama which develops as they grow older. Their progress is from make-believe to practical competence in dealing with the world.

THE AIMS OF THE SPECIAL CLASS

The aims of special class work with backward children may be summarized as follows:

- (i) To restore self-confidence and self-respect to those who have been failures throughout their school course.
- (ii) To give to all the satisfaction of successful effort, freely entered into.
- (iii) To provide, for the aggressive and difficult boy, the discipline of interesting work which is not too difficult for him.
- (iv) To give expert diagnosis of the child's difficulties, so as to help him by giving him exactly the right instruction. This requires a special knowledge of testing and teaching on the part of the teacher.

- (v) In this way we aim, if possible, to make him fit to take his place again with his class-mates. If this is not possible, owing to his low inborn capacity, we aim to enable him to use this capacity to the full.

The best test of a class of this kind is to sense the atmosphere. The children should be positively happy, active, and workman-like. The visitor should be tempted to think that the children are much brighter than they really are in intelligence, because of the independence and satisfaction in their bearing. (It goes without saying that this technique should influence the teaching of normal and brighter children too.)

THE ROLE OF THE TEACHER

The role of the teacher is first to provide the materials for the environment. This may come from a variety of sources (see Appendix) and the children themselves will bring a great deal from home. The material must be kept reasonably tidy and conveniently placed for use. The teacher must also provide constant change of stimulus, with new materials, tools, and books, a change of wall pictures and exhibits, and the organization of different excursions and visits. Help must be given when help is asked for. Provide information and expert assistance when possible; never be afraid to say you do not know, then you and the child can think out how to get to know. Individual records of the pupils' abilities and progress should be kept, using test results, observations of play and activities, notes of emotional difficulties, etc.

The plays children invent for themselves are most important. 'We've made a play, and it's about . . .' They are too formless to cause anything but amusement to grown-ups, but one must resist the temptation to alter them, to improve them, to 'produce' the children. Gross interference robs the fantasy of its emotional value for the child. It is not safe even to suggest things often. E. R. Boyce says:

- (i) Never *show* the children. Say 'Who will show me?' 'Who thinks he can do it better?' 'Who will try another way?'

- (ii) Never give the words. Ask them to help each other.
- (iii) Do not use a play as a vehicle for speech training. This should be a separate activity.
- (iv) Give as little help as will keep it going. Discard it at once if it does not go.

For practice, let them indicate common actions, film acting, mime. Remember that plays (i.e. acting for an audience) do not mean that private make-believe is no longer needed. Both are necessary to the growing child.

SOME OBJECTIONS ANSWERED

- (i) These methods can only be used with bright children.

There is evidence from activity schools that the backward gain more than the normal. The bright also gain more. Infants of 5, 6, and 7 learn through activities. A child of 9 or 10, of mental age 5, 6, or 7, will not produce interests or work just like those of the younger child, but he will be able to learn at his own mental level. Think what normal children at the mental age of 1 or 2 learn through their own activities.

In any case, present methods fail entirely with the backward; so the experiment is no risk!

- (ii) If we don't make children work, they will grow up spineless and useless. Discipline is needed. This method is soft.

In other words we prepare the child for the adult world by enforcing upon him conduct which adults think desirable—responsibility, obedience, honesty, truthfulness, by all the apparatus of moral suasion and punishment, pain, fear, or love.

We may argue that the schools have in general become much 'softer' during the last thirty years, yet the recent war has shown the generation so treated to be anything but soft.

Adult responsibility, honesty, truthfulness, etc., are the result of the pressures and tensions of adult desires

and the adult environment. The need to provide for wife and family; ambition, trade, and professional pride; the good opinion of fellow-workers; these and many other forces are the sources of the adult virtues.

- o Those who deviate from them are the unbalanced, the neurotic, the unadjusted individuals. If we give children the best possible chance of becoming happy, well-balanced adults, we do the most we can do to produce the adult virtues. If we try to force them too early, we thwart and frustrate the child's immediate impulses, and make him less able to grow up to his full powers, or to assume his full responsibilities when grown up. Child guidance experience has shown the great value of providing a suitable outlet for anti-social impulses, has shown how often they disappear when they have fulfilled the immediate need, and how much trouble is caused by frustrated desires. There is evidence from anthropology which points in the same direction, and recent experimental psychology supports the case also.

In summary, if we give the child the best chance of growing up stable and happy, he will not be found wanting when the test of adult responsibility comes.

(iii) Some children will learn nothing. They won't want to.

Some children learn nothing now, after nine years' compulsion, and many have their characters warped in the process. The risk of making this worse is slight, and experience shows that many of these children respond to the change in conditions by remarkable improvement both in work and in willingness to work.

(iv) If we wait until every child wants instruction, we may wait for ever with some.

This is partly answered above, but there is another point. Recent research shows that children are ready to learn to read at about the age of $6\frac{1}{2}$ years (*mental age*), and that formal arithmetic is best started a little later than this. Now this means that if transfer to the Junior School is made at an average age of 7·6, more than 15% of the children are in the Junior School

before they are ready to learn reading and formal arithmetic. The child of I.Q. 70 will not reach the 'reading age' until he is 9·3; and the child of I.Q. 50—the lowest level judged to be educable in the elementary schools—until he is 13·0 *years old*. It is clear that Junior Schools must be prepared to do more teaching of the rudiments as a natural duty, and not as due to the neglect of the Infant Schools. They will be helped, not hindered, if the backward children come to them *not* as children who have failed, but as children who have not yet tried. Clearly, only the Special Class will enable us to meet the needs of the 15% or so with I.Q.s under 85.

- (v) There are certain things every child ought to know.

Not, surely, if the attempt to make him know is going to have permanent ill-effects—and in addition is unsuccessful.

- (vi) It is unfair to stigmatize children by putting them in the Special Class.

In one class when the children were taunted, they answered 'You're jealous'. If the backward child gets the satisfaction it is possible to give him in such a class, he will not worry about the supposed stigma.

WE MAY NOW SUMMARIZE THE POSITION

(a) Our first aim is to establish self-confidence and self-respect. The best test of this is, does the child look and feel happy?

(b) Our means to the end is the development of an Activity Curriculum, the provision of materials, the stimulation of interest, the development of interests. Above all, *the child must be given the satisfaction of successful work*.

(c) The child will then genuinely want instruction. He will feel the need to read and write and count in order to finish the job in hand.

(d) There is a much better chance, under these conditions, that the child will grow up stable and happy, easy to get on with, and able to stand up to the world as it is.

(e) He will also have the best conditions to develop his thinking powers to the limit set by his natural endowment.

DIFFERENT KINDS OF BACKWARD CHILDREN

We are now in a position to answer the question we previously asked: Can we deal with the different kinds of backward children in the same class? The answer is Yes. They need the same conditions although they need different things to do, and different instruction. In any case, in a class of twenty you can deal with individuals and study their needs. (Even in a larger class the Activity Method makes it easier, not harder, to deal with differing levels of ability and attainment.) For the merely retarded this individual treatment will allow them to return to their normal class after three to six months.

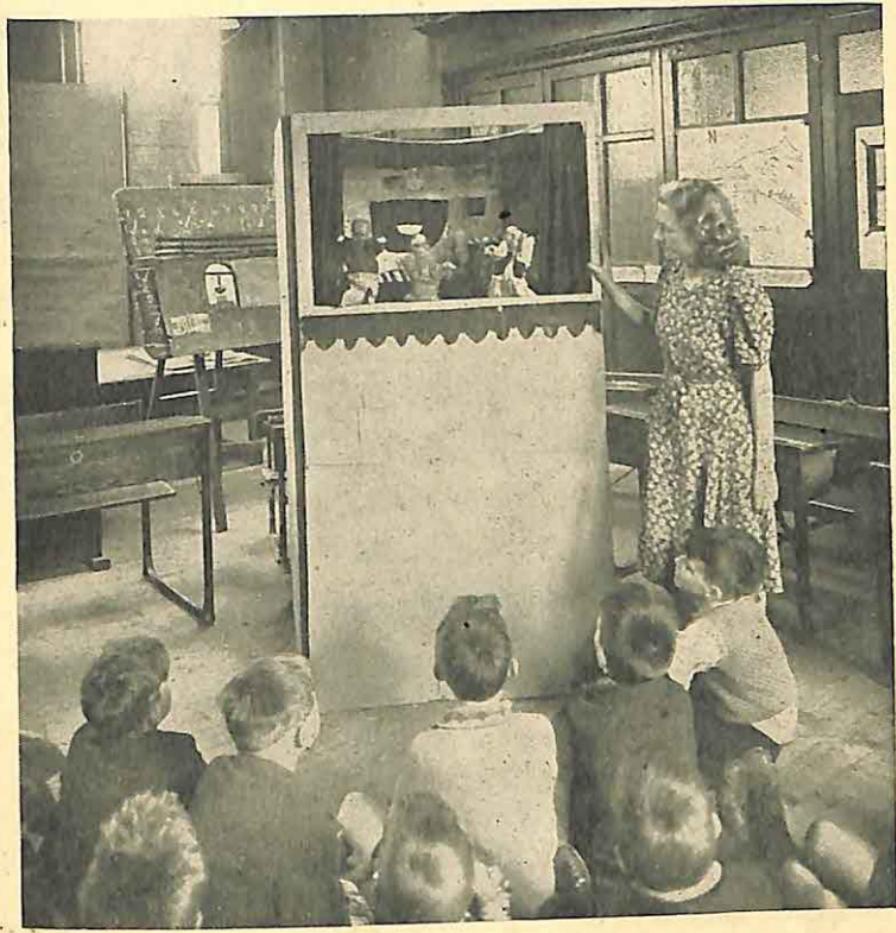
WHAT CAN WE DO TO PREVENT BACKWARDNESS?

- (i) Never teach anything until the child is ready for it, and needs it.
- (ii) Provide the kind of activities which will afford him success.
- (iii) Obtain quick and accurate diagnosis in the case of children showing backwardness by using standardized tests.

These measures could not prevent the dull being dull, but would ensure that they reached a standard commensurate with their ability. At present they are always behind the standard.

THE TOOL SUBJECTS

The Approach to Reading. According to experiments, the teaching of reading should not be begun until a mental age of $6\frac{1}{2}$ years is reached. Much effort will be wasted, and stupid methods of learning and teaching will be encouraged if this is disregarded. We must remember that the child of I.Q. 85 reaches the mental age of $6\frac{1}{2}$ at the age of 7 years 8 months, the child of I.Q. 70 at 9 years 3 months, and the child of I.Q. 50 at 13 years. It is better that the Junior School should have children coming in who have not been instructed in reading than to have those who have tried and failed,



A PUPPET SHOW IN PROGRESS

provided Junior Schools make proper provision for beginning the instruction of non-readers.

Ability in reading is a matter of degree. Some are able to read poetry and law, others only the popular press, others not even that. Dull children will never reach a high standard, or read the materials normal children read.

The Sentence Method is admitted to be the best method of teaching reading; indeed, when it is recognized that reading is getting the meaning of a passage it is the only method, to which other methods are expected to lead. It is possible that every child capable of learning to read can do so by this method. In addition, however, some method of word analysis must be picked up by every learner—phonetic, look-and-say (visual perceptual), with syllables, word-building or alphabetic technique (verbal sequence). It is generally recognized that phonetic methods are too difficult for dull children: very few of them use an auditory type of imagery. The old A B C method is often successful. Children differ greatly in natural preference, and their natural preferences should be followed.

Great variety of simple material rather than much repetition of the same sentences should be aimed at. The latter leads to repetition rather than reading. The best reading material is *what the child himself writes*. Let him write wall-posters, newspapers, diaries, accounts of visits, books on topics (with much illustration—cut-out pictures, drawings, and paintings). Let him print with a printing set and a typewriter as well as write.

Children cannot in general read words they do not know orally first. Hence every effort to expand vocabulary assists reading. But vocabulary cannot be expanded by lessons on words: *vocabulary is expanded by getting to know about things*. Hence every outside visit or excursion, every model made and understood, every story which enlarges imaginative understanding of the world, helps reading. Direct lessons on vocabulary are almost useless.

Study the errors children make in reading. Then you can discover their difficulties and devise a method which will give them the greatest help.

Finally, remember that a very dull child may easily live a

useful life without reading. *His emotional stability matters more than his ability to read.*

The Approach to Arithmetic. Research studies suggest that the best age to start formal arithmetic is a mental age of $7\frac{1}{2}$ years, and the earliest advisable is $6-6\frac{1}{2}$ years. Before this, much oral work, concrete and abstract, will be done, and the understanding of numbers will be greatly developed in the course of the activities. Note that I.Q. 85 reaches a mental age of $7\frac{1}{2}$ at $8\frac{3}{4}$ years, I.Q. 70 at 10 years, I.Q. 50 at 15 years.

There are two schools of thought about the transition from kindergarten methods to the formal stage of arithmetic. One makes the transition as gradually as possible. The second makes a clean break. The best method is probably the second. Here are some helpful rules: Start teaching the addition combinations with rather large numbers—say $5+4$. This discourages counting. Use flash cards and work-sheets, teaching, say, twenty combinations until you get an instant response. *Then immediately use these known combinations in problems of a simple type.* Keep a constant rhythm; teaching more combinations, revising the old ones, then using all-in problems. Do the same with the subtraction, multiplication, and division combinations. Go constantly back to problems. If a child cannot use his arithmetic in simple problems, it is useless to teach it to him.

This sort of learning can be done individually, and so may start when the child feels the need for it. Learning periods should be short—ten minutes is the limit—and application should be intense. Problems ought to be such as might really happen. Most books contain entirely stupid problems. Careful grading of difficulties is necessary.

School problem-solving is largely *reading*, not computing. Insufficient attention is paid to this aspect. At first problems should be real, not written and read. For backward pupils, real problems are even more necessary. Problems should be written only when the whole situation is already familiar in experience.

Study the child's errors, then you can tell him how to avoid them in future. Many children at present make the same errors

year after year. They are wrong; they never discover why—or how to avoid being wrong. Schonell's Diagnostic Arithmetic Tests are useful for pupils of 9 years and upwards.

The use of 'crutches' should never be insisted upon, and children should not be too handicapped by being made to write down more than they need. Never insist on a change of method.

STUDY OF THE INDIVIDUAL CHILD

It is part of the duties of a Special Class teacher to keep individual records of his pupils. These ought, if possible, to contain individual test records of intelligence, reading, and arithmetic. Time for testing may sometimes be obtained if the Special Class joins some other class for music, physical training, etc.

Tests to use:

Intelligence: The Terman-Merrill Revision of the Binet-Simon Scale¹ (Individual Test).

Sleight's Non-verbal Intelligence Test (Group Test).

Reading: Burt's *Directions and Vocabulary*.

Arithmetic: Burt's *Oral Problems*.

Ballard's *One-Minute Addition* and *One-Minute Subtraction*.

Schonell's *Diagnostic Arithmetic Test*.

Spelling: Schonell's Spelling Tests and Spelling Lists.

The Beacon Reading Tests may be found useful provided Beacon books are *not* being used.

IMPORTANT CAUSAL FACTORS

Some 60% of backward children are below I.Q. 85; i.e. are either dull or mentally deficient. *Low intelligence is the most common cause of backwardness.* But measurement shows that few dull children are working up to even their limited capacities so that there is considerable room for improvement.

¹ Training (and much practice) is necessary before the Binet test results are reliable. It is a test for the educational psychologist rather than the class teacher.

The *social causes of backwardness* are illustrated by the correlations of backwardness in the London boroughs: with mental deficiency 0·91; with overcrowding 0·89; with poverty 0·73; with infantile mortality 0·93. The child of low mentality usually suffers from poverty of background—material and cultural—from poor and unintelligent parental care, and from poor nutrition and unhygienic surroundings. From what we now know about vitamins, most backward children must be deficient in many important elements of a well-balanced diet. Experiments on Special Classes would be of great value. Some results suggest that great improvement in work could be obtained by making nutrition adequate at every point.

Among *school causes*, irregular attendance and change of school are common in backward children, 5–30% showing the first, 1–7% the second. The incidence among the merely retarded is higher still. Bad teaching is occasionally a cause.

Of the *physical defects*, defects of hearing are the most serious causes, and defects of nutrition the most frequent. Extra medical care is needed by the backward group, sometimes specialist attention.

SPECIFIC DEFECTS

Left-handedness is commoner among backward than normal. Burt recommends that at the beginning of school life an unobtrusive attempt should be made to encourage the use of the right hand in the conventional way. Those who do not respond to this should not be forced, but special care should be taken in teaching them all processes and forms having a left and right orientation—e.g. 107, when 701 is read, *b* and *d*, etc. The class must not be allowed to laugh at a left-hander: they will not if the teacher accepts it and says, ‘Well, he likes to do it that way’. No stammering results from a left-handed boy working right-handed, provided that appropriate methods are adopted to persuade him to make the change.

Colour Blindness is rarely found among girls, but one boy in twenty is colour blind. It has no connexion with backwardness, so far as is known, but it should be looked for.

Imagery. Backward children are much more visual—like

infants—than normals, and less verbal. Hence visual and actual presentation and active response is superior to talking.

Defects of *hearing* and *sight*, not so severe as deafness or blindness, must be expected and treated. Some children are deaf to high notes, some to low. Co-operation with the medical department is essential, since testing backward children is extremely difficult.

Laziness, according to Burt, is due to physical ill-health, intellectual maladjustment, or apathetic temperament, or to emotional disturbance or instability. Consequently it is often a remediable condition if its cause can be diagnosed.

SCHOOL ORGANIZATION

Junior Schools. From the foregoing pages it is clear that we think that every Junior School should have its Special Class. Open-air playground shelters, with adequate heating, make excellent classrooms for Special Classes, and difficulties of accommodation may be got over in this way. In schools of over 200 juniors two classes may be required: an older and a younger class, or a 'dull' class (say of thirty pupils) and a 'retarded' class of twenty who may be expected to improve rapidly.

Infant Schools and Secondary Modern Schools. The problem of the backward child is most acute in Junior Schools, but it exists in Infant and Secondary Modern Schools. Are Special Classes needed there?

In an area where Infant Schools have developed modern methods, instruction in reading and arithmetic will be postponed until the children are most fitted to accept it, and methods will be sufficiently individual to cater for the backward child in the ordinary class.

In Secondary Modern Schools we have better possibilities of grading pupils into suitable classes, since the schools are bigger and the classes may be smaller. When a policy of having Junior Special Classes has been followed for five years, we may expect (in most areas) to manage without Senior Special Classes. In default of this, or in particularly difficult schools or areas, one such Special Class will be of great value to a school,



A NATIVE KRAAL
MADE FROM MODELLING CLAY AND MILK-STRAWS

especially if it can be provided with a teacher who has had infant training and knows how to begin the pupil in reading and arithmetic, and who has had special training in the use of such techniques with older children.

Starting. The change-over to activity methods (particularly with a whole school) leads to a period of difficulty which may be rather depressing (read Boyce, *Play in the Infant School*). This can be to some extent avoided if the Activity period is gradually extended, changed from afternoon to morning, if more materials are gradually introduced, and consequent changes in the routine of the day made piecemeal.

It is doubtful which is the better method, the wholesale or the gradual change to free activities. A child coming into a school or class run on Activity lines is necessarily introduced to a going concern. The sudden change is no disadvantage to most of the children.

The Teacher. There is at present very little provision for training teachers for backward classes. Most L.E.A.s encourage their teachers to attend vacation and other short courses of all kinds by giving leave of absence and paying grants where these are needed. Many L.E.A.s will probably find it necessary to run classes specially devised for teachers of backward children, and it will often prove convenient for neighbouring L.E.A.s to support such classes. It ought to be represented to the teaching staff that experience of Special Class work is regarded as an asset, and selected teachers might be offered this work if they would take the necessary courses. Qualifications favouring selection should be Infant School training and experience in Free Activity methods, together with willingness to undertake extra work.

CONCLUSION: A SURVEY OF RESULTS

The heads of schools in those areas where Special Classes have been established are almost unanimous in their appreciation of two things: (a) the great relief it is to the ordinary teachers to be relieved of their most troublesome children; and (b) the tremendous difference in happiness and alertness which for most children follows even a few weeks in a well-run Special

Class. Head teachers by no means favourable in the first instance have been completely converted by the results, and have been surprised at the astonishing progress made by 8-year-olds who showed no ability at all in reading and arithmetic before joining the class. This happens in a class where there is apparently no effort to instruct in reading and arithmetic—where an old-fashioned schoolmaster would say the children were playing all the time.

I have seen some interesting developments in these classes. Each takes its character from the teacher in charge. One is specially noteworthy for the plays which are written and acted by the pupils—backward pupils. One is specially good at co-operative work in which all the children join—running a café or a hospital. One shows excellent handwork, in which the children take great delight. Each class has its own way of making the child feel that he matters, that he can do things, that after all he may perhaps learn, and be commended, not censured. I have seen a child formerly difficult—a Child Guidance case—the leading spirit in an actors' group. I have seen a boy of 15, unable to read, go back to school and find in a Special Class the help he needed. He was making rapid progress in reading and counting when last reported on. I have seen classes, in spite of war-time difficulties and interruption due to illness and so forth, gradually working out their version of the Free Activity technique. Even on the evidence we have this is work well worth extending. It has the support of understanding head teachers, of enthusiastic assistants, and of progressive educationists. Let it go on.

BIBLIOGRAPHY

A SHORT LIST OF USEFUL BOOKS ON SPÉCIAL SCHOOLS AND SPECIAL CLASS WORK

- Education of the Backward Child.* D. Kennedy Fraser. U.L.P., 7s. 6d., 1932.
- Practical Suggestions for Training Backward Children.* P. A. Barons. Charles & Sons, 4s. 6d.
- Education of Backward Children.* Various. Evans Bros. 1s. 6d., 1936.
- Classification and Education of Mentally Handicapped Children in Various Countries.* Hill & Verco. O.U.P., 4s., 1937.
- The Backward Child.* C. Burt. U.L.P., 20s., 1937.
- Infant and Nursery Schools,* 1938. H.M.S.O., 2s. 6d.
- The Primary School,* 1931. H.M.S.O., 2s. 6d.
- Special Educational Treatment.* Pamphlet No. 5, 1946. H.M.S.O.

ON MENTALLY DEFECTIVE CHILDREN

- Report of the Joint Committee on Mental Deficiency.* H.M.S.O., 1929.
- Education of Mentally Defective Children.* Descoudres. Harrap, 7s. 6d., 1928.
- Mental Defect.* L. S. Penrose. Sidgwick & Jackson, 10s. 6d., 1933.
- The Subnormal Mind.* C. Burt. U.L.P., 12s. 6d., 1935.

ON FREE ACTIVITY METHODS

- Intellectual Growth in Young Children.* S. Isaacs. Kegan Paul, 15s., 1930.
- Play in the Infant School.* E. R. Boyce. Methuen, 5s., 1938.
- Infant School Activities.* E. R. Boyce. Nisbet, 6s. 6d., 1939.
- Activity in the Primary School.* M. E. Daniel. Blackwell, 1947.

ON TESTS

- Measuring Intelligence.* Terman. Harrap, 10s. 6d., 1937.
- Handbook of Tests.* C. Burt. P. S. King, 5s., 1933.
(Burt's *Mental and Scholastic Tests* must be consulted for instructions and norms.)

One-minute Addition Test and One-minute Subtraction Test. P. B.
Ballard. U.L.P., 1s. per doz.

(Ballard's *Mental Tests* or *The New Examiner* for instructions
and norms.)

ON EDUCATION

Democracy and Education. J. Dewey.

How We Think. J. Dewey. Harrap, 7s. 6d., 1933.

Human Nature and Conduct. J. Dewey. Allen & Unwin, 10s. 6d.,
1922.

APPENDIX

EXAMPLES OF ACTIVITIES, SUPPLY AND STORAGE OF MATERIALS, ETC.

Examples of Activities

(Not to be tried with every class. Let the class guide you)

<i>Routine Activities</i>	<i>Sporadic Projects</i>	<i>Quiet Corner</i>
Daily discussion period	Birthdays	Reading
News bulletin or wall newspaper	The Bank	Number work
Milk money	Hospital	Drawing or painting
Attendances	Aeroplanes	Puzzles
Making books on: Journeys Topics Visits	Cooking Post Office Shops of various kinds Gangs, and gang huts Cowboys and Indians	Writing
Nature table		
Animal pets		
Drama and Puppets		

Storage of Materials and Room Arrangements

It is important that children should know what is available, and that they should be able to get it, and to tidy it away themselves. Bins along one or two sides of a classroom, made of boxes, open end outwards, facing into the classroom, piled one on the other, covered when not in use by a bright dust-sheet, fill the need. Shelves under the windows, and a corner for the bigger toys and for half-finished constructions are often needed.

Tables and chairs and small mats are preferable to desks, but there need not be one desk place to each child. Get rid of some desks and tables. Group others round the walls. The teacher's platform, turned upside down, makes a good sand-pit.

Porch, cloak-room, corridors, and the playground should all be used. Sheds, small and large huts are invaluable. Children ought to be nearly always out of doors in the summer. Access to the open air by ladders through a window sometimes can be arranged.

Supply of Materials

It will be clear that the supply of materials for classes of this kind is a proposition very different from the supply for the traditional class. Requirements are extremely varied and not all of them can be filled at the Educational Furnishing and Supply establishments. Classes want things which could never be foreseen, and they want them immediately. Members of the class benefit, too, if they can be allowed to participate in the buying. The annual requisition is, therefore, for many things, an unsuitable instrument, particularly if supplies arrive six to nine months after the original order. The method adopted in many successful classes is that the teacher pays for many things herself. It should be possible for some method to be devised to prevent the need for enthusiastic teachers to pay for equipment out of their own salaries.

There are two expedients which would solve these difficulties:

- (i) Each class might have petty cash, for which the head teacher accounts as it is used. £1 at a time, renewed as it is used up, is sufficient.
- (ii) Immediate order form. Heads of schools could have the right to go to local shops, set aside goods, and then come to the Education Office and have a requisition filled in then and there. They could then collect the goods the same day.

The bulk of the school's requirements could still be ordered on an annual requisition.

To the maxim, 'He gives twice who gives quickly', might be added, 'He who waits before giving may not give at all'.

I have known supplies arrive at a school after the class for which they were ordered had left!

Materials and Tools for Free Activities in Infant and Junior Schools

UP TO FIVE YEARS OLD

(The Under-Five list has been made the main list, and contains a good many things which will only rarely be used by under-fives, but might be tried with an exceptionally bright group.)

1. *Movement.* Climbing frame, balancing beam, smooth planks and boxes for running and climbing, swing boat, swing (outdoor and indoor) ladders, slides, low see-saws, stilts and 'walking boxes', doll perambulators, rocking horses.

'Trikes, pedal-cars, carts, barrows, boxes on wheels, old perambulator wheels with box on top, tip lorries, scooters, wooden horses, wooden engines (big enough to sit on). Put a strong double bottom on box before you fix wheels. An iron bar drilled for screws and split pins makes the most satisfactory axle.

2. *Destruction*. Hammers, old boxes, hammer pegs. Pile drivers, punching ball (suspend football on rope), match-boxes, cardboard boxes, things to burn, cloth and paper, scissors, etc., for cutting and tearing, potatoes, and knives. Dough, plasticine, clay, etc., are also useful to cut up. Carving can be a destructive activity, so can fretsawing and hammering posts into the ground.

3. *Making and Mending*. Low bench and table, claw hammer, pincers, pliers, scissors (rounded ends), cardboard knives, small saw. Old boxes, plywood, cardboard and corrugated cardboard, copper wire, cork, rubber (old inner tubes) tea-chests, orange and banana boxes. Wooden bricks, hollow cardboard bricks (full size and half size), planks and boards for building with bricks. Wooden boxes used for packing certain types of cheese make good bricks. There ought to be sufficient bricks to build houses, tanks, and boats that the children can get into.

4. *Modelling*. Dough of flour and salt, clay, plasticine, wax, cooking apparatus, paint, wooden spoons, skewers, knives, etc.

5. *Cooking*. Supplies of flour, lard, jam, sugar, coffee, tea, currants, coconut, chocolate powder, potatoes, etc. (Schools can be recognized as cooking centres, and rationed.) Real cooking utensils of small size (Dryad), electric, gas, or fire oven, hot plate. Some of the cooking will be make-believe, but some will be real. White cooking aprons. Table covered with American cloth, glass jars, rolling pins and boards, cutters and patty tins. Mincer, nut mincer, sugar sifter.

6. *Wet and Dirty Play*. Paddling pool, running water with sand at edge. Outside sand-pit, partly sheltered, with flat surround and island in the centre for sitting on, making pies, etc. Sand tray for use with water inside. Floating toys, boats, etc. Old bath or wash tub, long zinc tray, 'Aquatite' paper. Watering-cans, hose, teapot, jugs, tea-set, cans and measures for pouring, funnel and tubing, sponge. Digging in the garden—waterproof cloth (double size ground sheets) for messes on the floor. Washing tubs and material for washing clothes and crockery. Overalls and gumboots, mackintosh aprons, etc. Finger-paints, distemper powder for thick pastes as well as washes.

7. *Cleaning*. Sweeping brushes (full-size head, half-size handle),

dusters and washing cloths, scrubbing brushes, soap and soap flakes, dusting brushes and dust pans, pails and buckets, mop and polishing materials, feather dusters. Brass polish, wax polish.

8. *Shop Play*. Shop made out of planks and boxes, covered with paper or cloth. Children will provide packets. Rice, etc., to weigh out. False money, etc. Play is mostly make-believe at this age.

9. *Home Play*. Wendy house, boxes large enough for children to get into. 'Cosy corners', clothes horses, curtains and screens, sets of cups and saucers. Stools, chairs, tables. Cleaning and cooking materials, canvas. Branches of trees, etc., for outdoor hut. Pipe cleaner, corks, etc., for making little people for the doll's house. Books of wallpaper, cellophane, cloth for rugs, strong paper for lino, etc.

10. *Dolls*. Unbreakable and washable rubber dolls are worth the money, but there ought to be stuffed dolls and china dolls as well. Doll pram—materials for clothes, beds, cots, baths, etc. The School Medical Department may help with this.

11. *Acting*. A small stage is worth while. Dressing up box of old clothes and pieces of material. Good quality paper hats last for some time. Properties for imitating grown-ups, policemen, postmen, miners, etc.

12. *Music and Rhythm*. Percussion instruments, gramophone and records (plus any instrument which the teacher herself can play—e.g. bamboo pipe, recorder, flute, violin, etc.).

13. *Drawing and Painting*. Easels or boards fitted to walls. Large sheets kitchen paper, butcher's wrapping paper, ends of rolls from newspaper offices, newsprint, coloured paper, powder paints, big brushes, big crayons, finger-paints. Fix the paper with two clothes pegs at top.

14. *Worlds*. Individual sand trays and sand bin (sand slightly damp). Large sand tray, dinky toys, trees, houses, men and women, guns and tanks, boats and aeroplanes, cars and trains and buses, animals, and so forth, for 'world constructions' (small gardens, traffic docks, etc.).

15. *Nature*. Small garden, garden boxes, flannel for mustard and cress, tools, watering-cans, aquarium for tadpoles, snails, newts, water plants, etc. Goldfish, nature table for above and for flowers and leaves. Indoor garden in zinc trough, herb garden. Pets—cats, dogs, dormice, white mice, tortoise and hedgehog, etc. A hen and chickens, pigeons, guinea-pigs, frogs and toads, worms in wormery, beetles and spiders. Exchange weeds and wild flowers with other schools in other parts of the country. *Quick-growing seeds and*

plants—mustard and cress, peas, sunflowers, wheat, barley, oats. *Trees*—acorns, beech-nuts, chestnuts, sycamore, ash, apple and orange pips. *Bulbs*—scylla, crocus, and snowdrop. *Herbs*—thyme, pennyroyal, camomile, mint, parsley, chives. *Flower seeds*—Virginia stock, lobelia, nasturtiums, marigolds, alyssum. *Plants*—catmint, candytuft, antirrhinums, pansies, violets.

16. *Investigation*. Table with old clocks, watches, etc. Magnets and tacks, electric bell, petrol lighter, lenses, prisms, stones, tuning fork, battery and bulbs, shells. Children bring things. ‘Many authorities have agreed to dig up asphalt to provide gardens for small children. They might, if asked, do the same to provide a piece of waste ground’ (E. R. Boyce). Digging, making mountains, rivers and villages, harbours and docks; provide overalls or old coats and dungarees, spades and trowels.

17. *Quiet Corner*. Books, and paper for writing. Jig-saws, peg and bead boards, mosaics, number apparatus, shells and buttons. Beads for threading. Picture trays, typewriter, printing set.

FOR CHILDREN FIVE TO SEVEN

1. *Movement*. Delete balancing beam. Add scooters, kites, model aeroplanes.

2. *Destruction*. Add small hatchet, mallet for driving posts into ground. Delete hammer pegs.

3. *Making and Mending*. Attempt all mending before sending it out. Tools—cramps for holding things while gluing. Block plane for smoothing. Bench. Brace and centre bits, screw-driver bit. Keyhole saw, tenon saw, screw-drivers, and bradawl. Spokeshave, glass-paper. Dryad safety cutting ruler and cardboard knife. Materials—nails and screws, castors, wheels and hinges, cotton reels, wooden boxes of all kinds, carpenters’ waste wood, florist’s wire, copper wire, tinned and double cotton covered gauges 28, 20, and 16. Cardboard boxes and all kinds of paper. Pipe cleaners. Materials for making simple puppets. Cælico, sacking, all kinds of cloth from muslin to pack-sheet. Pictures. Catalogues often stimulate new constructive activity. Matador, Minibrix, Meccano, etc. Junk from all kinds of tradesmen, plumbers, electricians, joiners, builders.

4. *Modelling*. No change.

5. *Cooking*. No change.

6. *Wet and Dirty Play*. Add real paints and brushes. Turpentine. Plasterer’s tools.

7. *Cleaning*. No change.

8. *Shop Play.* Weighing and measuring apparatus (account books and notices will be made), plenty of wrapping paper, labels, etc.
9. *House Play.* Egg-boxes used whole (6 ft. by 2 ft. by 6 in.), nailed together with straps of wood make the construction of a 'gong' hut easy.
10. *Dolls.* No change.
11. *Acting.* No change.
12. *Music.* No change.
13. *Drawing and Painting.* Add coloured sticking-paper, paste, and scissors.
- 14 to 17. No change.

ADDITIONS FOR JUNIOR CHILDREN

The more backward children reaching the Junior School (10-30%) are still at the infant stage of intelligence and still require Infant School activities and apparatus. Junior activities and projects take such varied forms that it is impossible to prepare for many of them more than a day before.

Clay for modelling, materials and tools for potato and lino cuts for printing on cloth, etc. Toy and other catalogues for ideas and for cutting out. Picture magazines, comics and adventure magazines, library for reference and for borrowing in each classroom. Geographical pictures, maps, and old atlases and geography books which can be cut up for book-making. Similar materials for history, nature study, etc. Masks for acting, including animals' heads. Puppet materials.

A display table where new things are first displayed is a good idea, and is often a useful means of directing attention to something the teacher wishes to introduce.

**Bureau of Educational & Psychological
Research Library.**

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